

## CLAIMS

1. A bridging system for a communication system comprising a first gateway and a second gateway arranged to communicate with each other, each gateway being connectable to a different bus of the communication system, the first gateway being operative to communicate details of available devices on its respective bus to the second gateway, the second gateway being operative to generate at least one proxy element corresponding to each of said available devices, each proxy element being operative to communicate data and messages between devices on the bus of the second gateway and the device on the first gateway corresponding to the proxy element.

2. A bridging system according to claim 1, in which the second gateway is operative to communicate details of available devices on its respective bus to the first gateway, the first gateway being operative to generate at least one proxy element corresponding to each of said available devices, each proxy element being operative to communicate data and messages between devices on the bus of the first gateway and the device on the second gateway corresponding to the proxy element.

3. A bridging system according to claim 1, in which each gateway is controllable so that only selected details of available devices are communicated to the other gateway.

4. A bridging system according to claim 3, in which each gateway is controllable so that only details of selected available devices are communicated to the other gateway.

5. A bridging system according to claim 1 in which each bus maintains a registry in which details of devices available on that bus are registered, each gateway being operative to register with the registry to receive new details of devices becoming available on the bus.

6. A bridging system according to claim 1, in which details of an available device include functional component modules, the generated proxy element comprising a proxy functional component module.

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7. A bridging system according to claim 1, in which details of an available device include cable plugs, the generated proxy element comprising a proxy cable plug.

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8. A bridging system according to claim 1, in which details of an available device include device control modules, the proxy element comprising the user interface of the device control module.

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9. A bridging system according to claim 1, in which details of an available device include isochronous data transmissions, the proxy element comprising a proxy isochronous connection.

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10. A bridging system according to claim 9, in which the proxy isochronous connection being operative to decode received isochronous data transmissions and re-encode the isochronous data for transmission on a remote bus.

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11. A bridging system according to claim 9, in which an isochronous data connection is only set up if sufficient resources are available on all busses and gateway connections involved.

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12. A bridging system according to claim 11, in which an isochronous data connection is set up by each proxy element or proxied element issuing a connection request to its bus' respective stream manager.

13. A bridging system according to claim 1, in which a proxy element comprises code and at least a part of a data table held by a gateway.

14. A bridging system according to claim 13, in which each proxy element on each bus is assigned a new id.

5           15. A bridging system according to claim 14, in which the data table is a routing table mapping the id of the proxy element to the id of the proxied element on the other bus.

10           16. A bridging system according to claim 1, in which the first and second gateways are implemented in a single device.

15           17. A bridging system according to claim 1, in which a connection between devices on a remote bus is represented as an internal connection by a gateway.

18. A bridging system according to claim 1, in which the communication system is HAVi compliant.